

REMARKS

This paper responds to the Office Action mailed on May 1, 2006. Claims 21-40 are now pending in this application.

Allowable Subject Matter

Claims 21-26 and 33-40 were allowed.

§103 Rejection of the Claims

Claims 27-32 were rejected under 35 USC § 103(a) as being unpatentable over Nelson et al. (U.S. 6,046,905) in view of Johnson et al. (U.S. 4,321,423). The Examiner acknowledges at page 2 of the Final Office Action that “Nelson lacks specific teaching of wherein the pin is soldered to the motherboard to couple the heat sink to the electronic device and the motherboard.”

Applicant respectfully submits that a *prima facie* case of obviousness has not been established for at least the following reasons: (i) there is no motivation or suggestion to combine Nelson and Johnson; and (ii) Nelson and Johnson teach away from any type of combination.

I. There is no motivation or suggestion to combine Nelson and Johnson.

The Final Office Action states at page 3 that “[i]t would be obvious to use the wave soldering technique taught by Johnson to connect the pins to the motherboard instead of the spring clip of Nelson for the benefit of strong mechanical connection between the pin and the motherboard.” The Office Action must provide specific, objective evidence of record for a finding of a suggestion or motivation to combine reference teachings and must explain the reasoning by which the evidence is deemed to support such a finding. *In re Sang Su Lee*, 277 F.3d 1338, 61 U.S.P.Q.2d 1430 (Fed. Cir. 2002). Mere conclusory statements are unsatisfactory.

“With respect to Lee’s application, neither the examiner nor the Board adequately supported the selection and combination of the Nortrup and Thunderchopper references to render obvious that which Lee described. The examiner’s conclusory statements that ‘the demonstration mode is just a programmable feature which can be used in many different devices for providing automatic introduction by adding the proper programming software’ and that ‘another

motivation would be that the automatic demonstration mode is user friendly and it functions as tutorial” do not adequately address the issue of motivation to combine. This factual question of motivation is material to patentability, and could not be resolved on subjective belief and unknown authority. It is improper, in determining whether a person of ordinary skill in the art would have been lead to this combination of references, simply to use “[use] that which the inventor taught against its teacher.’ *W.L. Gore V. Garlock, Inc.*, 721 F. 2d 1540, 1553, 220 USPQ 303, 312-13 (Fed. Cir. 1983).” *Lee*, at 1343, 1344.

Applicant respectfully submits that the Examiner’s statement is analogous to the conclusory statements made by the Examiner and Board in the *In re Lee* case. In addition, Applicant notes that the only teach relating to “the pin being soldered to the motherboard to couple the heat sink to the electronic device and the motherboard” in combination with “a member within the opening in the heat sink, the member being between the heat sink and the pin” is found in Applicant’s specification and claims.

II. Nelson and Johnson teach away from any type of combination.

Applicant respectfully submits that Nelson and Johnson teach away from any type of combination. A factor cutting against a finding of motivation to combine or modify the prior art is when the prior art teaches away from the claimed combination. A reference may be said to teach away when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path the applicant took. *In re Gurley*, 27 F.3d 551, 31 USPQ 2d 1130, 1131 (Fed. Cir. 1994); *United States v. Adams*, 383 U.S. 39, 52, 148 USPQ 479, 484 (1966); *In re Sponnoble*, 405 F.2d 578, 587, 160 USPQ 237, 244 (C.C.P.A. 1969); *In re Caldwell*, 319 F.2d 254, 256, 138 USPQ 243, 245 (C.C.P.A. 1963).

Applicant respectfully submits that Nelson teaches away from any type of soldered connection between the pins and motherboard as described in Johnson. Applicant respectfully refers the Examiner to Nelson at col. 1, lines 41-49; col. 2, lines 14-19 & 63-65; and col. 3, lines 4-6, which describe that Nelson uses the bent portions 38 of the spring 32 to compensate for manufacturing tolerances that would otherwise increase thermal impedance between the thermal element 24 and the integrated circuit package 12. Applicant notes that soldering the pins 26 to the motherboard as described in Nelson would not allow for relative movement between

components such that the cartridge 10 disclosed in Nelson would be unable to compensate for manufacturing tolerances (which is the express purpose of the cartridge 10 design disclosed in Nelson).

Applicant also can not see why one of ordinary skill in the art would solder the pins 26 disclosed in Nelson to the motherboard. First, there is no need to connect the pins 26 to the motherboard as the bent portions 38 of the spring 32 are already connected to the pins 26. Therefore, connecting the pins 26 to the motherboard would be redundant. Second, connecting the pins 26 to the motherboard in Nelson would contradict the need for the pins 26 to move through the motherboard as the spring 32 deflects to accommodate packages of varying tolerances (see, e.g., Nelson at col. 1, lines 41-49; col. 2, lines 14-19 & 63-65; and col. 3, lines 4-6).

Applicant also can not see where one of ordinary skill in the art would incorporate the spring 32 design disclosed in Nelson into the device disclosed in Johnson because Johnson teaches away from any type of spring (or clip) design. Johnson teaches using a spacer 17 to maintain a particular height between the motherboard and a heat sink such that Johnson is unable to compensate for any varying manufacturing tolerances (see Johnson at col. 3, lines 32-36). In addition, the deflecting springs 32 of Nelson are not required in the device of Johnson because Johnson describes using a soldered connection (which is an inherently fixed connection).

Reconsideration and allowance of claims 27-32 are respectfully requested.

Applicant's Comments on Examiner's Response to Arguments

The Examiner states at pages 3-4 of the Final Office Action that “[t]he motivation to make the combination suggested is explicit in Hsieh (PN 6,822,867). Hsieh teaches the failings of the spring clip method (col. 1, 48-65, Fig. 1) and the improvement of soldering the pins directly to the motherboard (col. 3, 1-12, Fig. 11, 12). Hsieh establishes the fact that it was known before the invention by applicant to replace spring clip with solder connections.”

Applicant respectfully disagrees with the Examiner's assertion.

Applicant initially notes that Hsieh is not part of the rejection yet the Examiner is using Hsieh in order to provide a motivation to combine Nelson and Johnson. Applicant further notes that none of the portions of Hsieh which were cited by the Examiner would cause one of the

ordinary skill in the art to modify Nelson as described in Hsieh because soldering the pins 26 to the motherboard in the device described in Nelson would not allow for relative movement between components such that the cartridge 10 disclosed in Nelson would be unable to compensate for manufacturing tolerances (which is the express purpose of the cartridge 10 design disclosed in Nelson).

Applicant again notes that there is no need to connect the pins 26 in Nelson to the motherboard as the bent portions 38 of the spring 32 are already connected to the pins 26. Therefore, connecting the pins 26 to the motherboard would be redundant. In addition, connecting the pins 26 to the motherboard in Nelson would contradict the need for the pins 26 to move through the motherboard as the spring 32 deflects to accommodate packages of varying tolerances.

Reservation of Right to File Continuation or Divisional Applications

Applicant respectfully traverses the pending 35 USC § 103 rejections. Applicant reserves the right to file a continuation application relating to any of the original and/or canceled claims at a later date. Applicant also respectfully reserves the right to traverse any statements in the Office Action relating to the rejections (e.g., under MPEP 2144.04 among other things). Applicant is expressly not admitting to any assertions made in the Office Action.

Reservation of Right to Swear Behind References

Applicant reserves the right to swear behind any references which are cited in a rejection under 35 U.S.C. §§102(a), 102(e), 103/102(a), and 103/102(e). Statements distinguishing the claimed subject matter over the cited references are not to be interpreted as admissions that the references are prior art.

RESPONSE UNDER 37 C.F.R. 1.116 – EXPEDITED PROCEDURE

Serial Number: 10/607,783

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Title: HEAT SINK ASSEMBLY AND METHOD OF ATTACHING A HEAT SINK TO AN ELECTRONIC DEVICE ON A MOTHERBOARD

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Conclusion

Applicant respectfully submits that the claims are in condition for allowance and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney at (262) 646-7009 to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

Respectfully submitted,

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